

**Species Listing PROPOSAL Form:**  
**Listing Endangered, Threatened, and Special Concern Species in Massachusetts**

Scientific name: Apamea mixta

Current Listed Status (if any): Special Concern

Common name: Coastal Plain Apamea Moth

**Proposed Action:**

☐ Add the species, with the status of : \_\_\_\_\_

☒ Remove the species

☐ Change the species' status to: \_\_\_\_\_

Change the scientific name to: \_\_\_\_\_

Change the common name to: \_\_\_\_\_

(Please justify proposed name change.)

**Proponent's Name and Address:**

Michael W. Nelson, Ph.D., Invertebrate Zoologist  
1 Rabbit Hill Road, Westborough, MA 01581

Phone Number: 508-389-6374

Fax: 508-389-7891

E-mail: [mike.nelson@state.ma.us](mailto:mike.nelson@state.ma.us)

Association, Institution or Business represented by proponent: Natural Heritage & Endangered Species Program,  
Massachusetts Division of Fisheries & Wildlife

Proponent's Signature: \_\_\_\_\_

Date Submitted: December 5, 2007

Please submit to: Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581

**Justification**

Justify the proposed change in legal status of the species by addressing each of the criteria below, as listed in the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00), and provide literature citations or other documentation wherever possible. Expand onto additional pages as needed but make sure you address all of the questions below. The burden of proof is on the proponent for a listing, delisting, or status change.

(1) **Taxonomic status.** Is the species a valid taxonomic entity? Please cite scientific literature.

Yes, *Apamea mixta* is considered to represent a full, valid species (Hodges 1983, Poole 1989).

(2) **Recentness of records.** How recently has the species been conclusively documented within Massachusetts?

The most recent record is a specimen at the Harvard Museum of Comparative Zoology, collected on August 6, 1975 by W.E. Tomlinson, at the Agricultural Experiment Station in Wareham, Massachusetts.

(3) **Native species status.** Is the species indigenous to Massachusetts?

Yes. Records date back prior to 1943 (Jones & Kimball 1943).

(4) **Habitat in Massachusetts.** Is a population of the species supported by habitat within the state of Massachusetts?

As far as is known, no, not currently.

(5) **Federal Endangered Species Act status.** Is the species listed under the federal Endangered Species Act? If so, what is its federal status (Endangered or Threatened)?

No.

## Appendix A

### **(6) Rarity and geographic distribution.**

(a) Does the species have a small number of occurrences (local populations) and/or small size of populations in the state? Are there potentially undocumented occurrences in the state, and if so, is it possible to estimate the potential number of undocumented occurrences?

This species has not been documented in Massachusetts in over 32 years. In late July and early August of 2001 and 2002 I set light traps in likely habitat in the vicinity of the historic occurrence (a total of 7 trap-nights), but failed to re-document the species. Paul Goldstein and Tim Simmons did not find this species on Martha's Vineyard despite intensive moth sampling across the Island in the 1980s and 1990s. Mark Mello has not found this species on Nantucket despite intensive moth sampling there over the past several years.

(b) What is the extent of the species' entire geographic range, and where within this range are Massachusetts populations (center or edge of range, or peripherally isolated)? Is the species a state or regional endemic?

This species has been documented in scattered localities from Nova Scotia, Quebec, and Ontario, south along the coast to North Carolina, and inland to New York and Maryland. There are currently only a few extant populations known, in Maryland and North Carolina (NatureServe 2007).

### **(7) Trends.**

(c) Is the species decreasing (or increasing) in state distribution, number of occurrences, and/or population size? What is the reproductive status of populations? Is reproductive capacity naturally low? Has any long-term trend in these factors been documented?

The only thing that can be said about trend for this species is that it formerly occurred in the state (and was very rare), and it is now historic, possibly extirpated.

### **(8) Threats and vulnerability.**

(d) What factors are driving a decreasing trend, or threatening reproductive status in the state? Please identify and describe any of the following threats, if present: habitat loss or degradation; predators, parasites, or competitors; species-targeted taking of individual organisms or disruption of breeding activity.

This species is associated with coastal bog and freshwater marsh habitats, so historic habitat loss due to cranberry bog creation, and ongoing spread of invasive plants and other wetland degradation in an increasingly developed landscape, may have contributed to its decline. This species is probably vulnerable to Malathion and other insecticides used in mosquito control.

(e) Does the species have highly specialized habitat, resource needs, or other ecological requirements? Is dispersal ability poor?

This species is associated with coastal bog and freshwater marsh habitats. Its larval hosts are undocumented, but are probably grasses or sedges.

### **Conservation goals.**

What specific conservation goals should be met in order to change the conservation status or to remove the species from the state list? Please address goals for any or all of the following:

- (a) State distribution, number of occurrences (local populations), population levels, and/or reproductive rates
- (b) Amount of protected habitat and/or number of protected occurrences
- (c) Management of protected habitat and/or occurrences

**Literature cited, additional documentation, and comments.**

Hodges, R.W. (ed.). 1983. *Check List of the Lepidoptera of America North of Mexico*. E.W. Classey Limited and the Wedge Entomological Research Foundation. Cambridge University Press, Cambridge, UK.

Jones, F.M., and C.P. Kimball. 1943. *The Lepidoptera of Nantucket and Martha's Vineyard Islands, Massachusetts*. The Nantucket Maria Mitchell Association, Nantucket, Massachusetts.

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life (<http://www.natureserve.org/explorer>). Version 6.2. NatureServe, Arlington, Virginia. (December 2007 ).

Poole, R.W. 1989. Noctuidae. Fascicle 118, Part 1 in: Heppner, J.B. (ed.). *Lepidopterum Catalogus* (New Series). E.J. Brill, New York, New York.